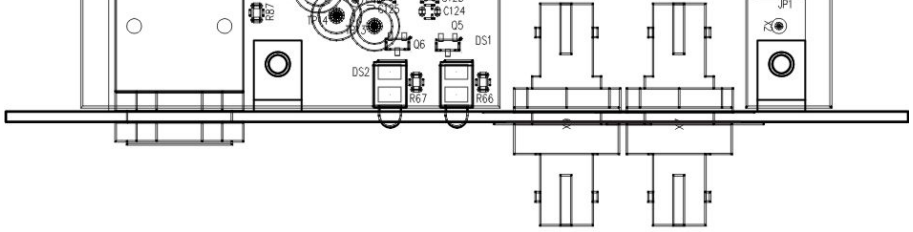

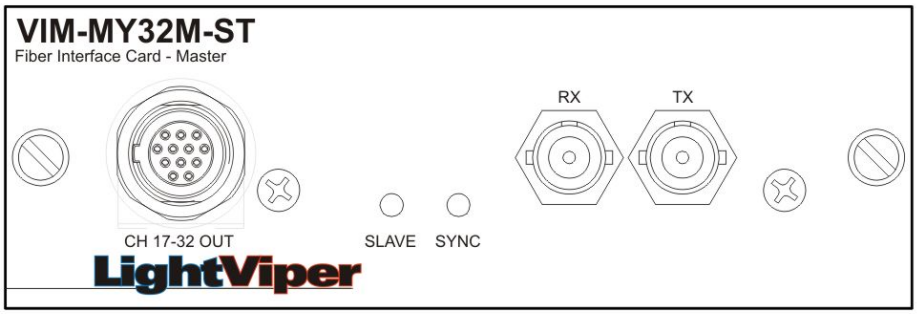

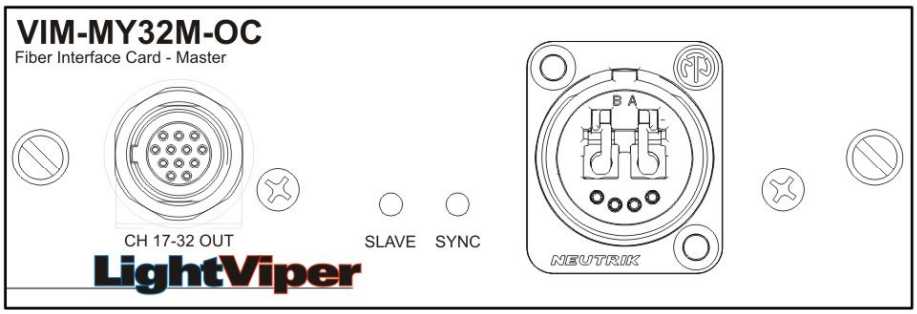

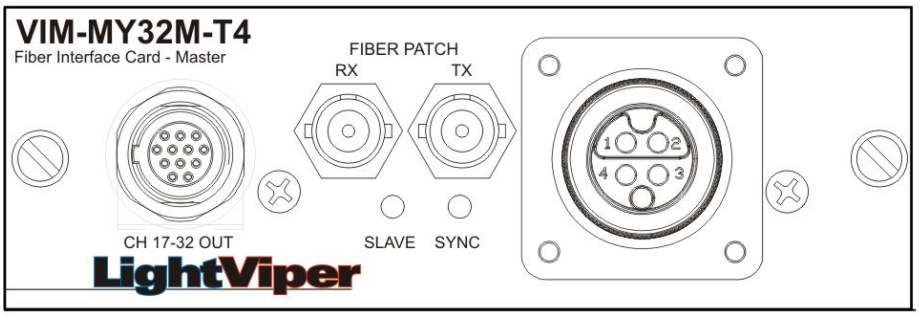

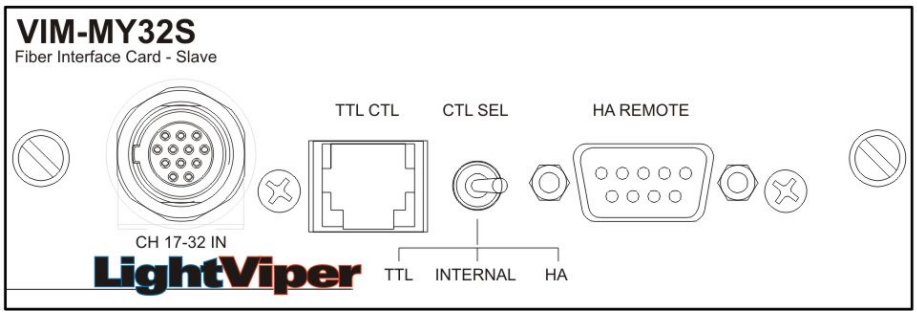

LightViper
FIBER OPTIC AUDIO SNAKE

USER MANUAL FOR
VIM-MY32 Cards

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Warning for Your Protection

1. Read these instructions
2. Keep these instructions
3. Heed all warnings
4. Follow all instructions
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

The apparatus shall not be exposed to dripping or splashing. No objects filled with liquids, such as vases, shall be placed on the apparatus.

"WARNING To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture."

Warning

Failure to observe the following warnings may lead to risk of serious injury from fire or electric shock. Before installing the card, you must refer to the owner's manual of the host device or to the Yamaha website to verify that your host device supports this card, and to verify the number of cards that can be installed in combination with other Yamaha or third-party cards.

- Do not attempt to disassemble or modify the card.
- Do not apply excessive force to board connectors or other board components. (Mishandling the board may lead to shock, fire hazard, or equipment failure.)
- You must turn off the power of your device before you begin installing the VIM-MY32 card.
- Be sure to disconnect the power cable from the main unit before installing this card (to eliminate shock hazard).

Caution

Failure to observe the following precautions may lead to personal injury, or may result in damage to equipment or other property.

- Do not touch the board's metallic leads (pins) when handling the card. (Pins are sharp and may cause hand cuts.)
- The card is electrostatic-sensitive. Before handling the card, you should briefly touch the main unit's metal casing with your bare hand so as to drain off any static charge from your body.

General Installation Instructions

Please consider besides these general instructions also any product-specific instructions in the "Installation" chapter of this manual.

When installing or removing LightViper VIM-MY32 cards in any Yamaha console with YGDAI card slots, please pay close attention to the following instructions.

1. Only use the VIM-MY32 cards with Yamaha digital consoles containing YGDAI card slots
2. ***ALWAYS BE CERTAIN TO POWER DOWN THE CONSOLE WHEN INSTALLING OR REMOVING THE VIM-MY32 CARDS.***

Important Safety Instructions

ATTENTION: RISQUE DE CHOC ELECTRIQUE – NE PAS OUVRIR

WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK
DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE

The symbols shown above are internationally accepted symbols that warn of potential hazards with electrical products. The lightning flash with arrow point in an equilateral triangle means that there are dangerous voltages present within the unit. The exclamation point in an equilateral triangle indicates that it is necessary for the user to refer to the owner's manual.

These symbols warn that there are no user serviceable parts inside the unit. Do not open the unit. Do not attempt to service the unit yourself. Refer all servicing to qualified personnel. Opening the chassis for any reason will void the manufacturer's warranty. Do not get the unit wet. If liquid is spilled on the unit, shut it off immediately and take it to a dealer for service. Disconnect the unit during storms to prevent damage.

Marking and warning information is provided on the bottom of the apparatus case.

Registration

Be sure to register your LightViper product, either by filling in the enclosed Registration Card or by completing the on-line registration form at our Web site:

http://lightviper.com/register.aspx

If you do so, FiberPlex can contact you with any update information. As enhancements and upgrades are developed, you will be contacted at the registration address. Please read this manual - if you call for technical support, we'll assume that you have.

Please address any inquiries to your dealer or directly to FiberPlex at:

FiberPlex Inc.
10840-412 Guilford Rd.
Annapolis Junction, MD 20701
301.604.0100 Fax: 301.604.0773
sales@fiberplex.com

Warranty, Service and Terms and Conditions of Sale

For information about Warranty or Service information, please see our published 'Terms and Conditions of Sale'. This document is available on fiberplex.com or can be obtained by requesting it from sales@fiberplex.com or calling 301.604.0100.

Disposal

Disposal of Packing Materials

The packing materials have been selected with environmental and disposal issues in mind. All packing material can be recycled. Recycling packing saves raw materials and reduces the volume of waste. If you need to dispose of the transport packing materials, please try to use recyclable means.

Disposal of Used Equipment

Used equipment contains valuable raw materials as well as materials that must be disposed of professionally. Please return your used equipment via an authorized specialist dealer or via the public waste disposal system, ensuring any material that can be recycled is. Please take care that your used equipment cannot be abused. After having disconnected your used equipment from the mains supply, make sure that the mains connector and the mains cable are made useless.

Declarations of Conformity

Class A Equipment - FCC Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide a reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Disclaimer

The information in this document has been carefully checked and is believed to be accurate at the time of publication. However, no responsibility is taken by us for inaccuracies, errors, or omissions, nor is any liability assumed for any loss or damage resulting either directly or indirectly from use of the information contained within it.

Introduction

Congratulations on your purchase of a LightViper system. LightViper products are designed, engineered and manufactured by FiberPlex Inc., experts in fiber optics with decades of experience. Our work in audio and data communications products is known in US government applications worldwide. LightViper products combine our pioneering technology with the highest standards in audio engineering.

The LightViper System

You have purchased the LightViper VIM-MY32 cards. Instead of traditional heavy multi-conductor copper cable, LightViper fiber optic systems utilize lightweight, flexible, military tactical grade fiber-optic cable or duplex PVC and plenum rated fiber for installation use. The VIM-MY32 cards allow you to connect your LightViper snake system directly via fiber-optic digital with any Yamaha digital console containing YGDAI card slots.

The Fiber Advantage

- Fiber optics offer many advantages over copper:
- Transmits light rather than electrons
- Transmission over greater distances (more than 2 Km [1.25 mile])
- Complete electrical isolation
- Immunity to RFI and EMI
- Eliminates ground loop problems
- Can be routed overhead, through walls, or underground
- Avoids foot traffic while maintaining aesthetics

Functional Considerations

- The LightViper VIM-MY32 cards contain no user serviceable parts. Please contact Fiberplex directly with any service issues.
- The LightViper VIM-MY32 cards are for use with Yamaha digital consoles containing YDGAI card slots ONLY.
- The VIM-MY32 cards are powered from the Yamaha console. ***ALWAYS POWER DOWN YOUR CONSOLE BEFORE INSERTING OR REMOVING VIM-MY32 CARDS FROM YOUR CONSOLE.***

Standard Components

In its standard configuration, the Light Viper VIM-MY32 cards are made up of the following primary components.

The VIM-MY32 Cards — The VIM-MY32 cards are available in (4) versions, (3) masters and (1) slave. The VIM-MY32MST is a master card containing (2) ST fiber connectors. The VIM-MY32MOC is a master card containing a single Neutrik OpticalCon connector. The VIM-MY32MT4 is a master card containing a single TAC-4 (four fibers) connector. The VIM-MY32S is a slave card and contains no fiber connectors.

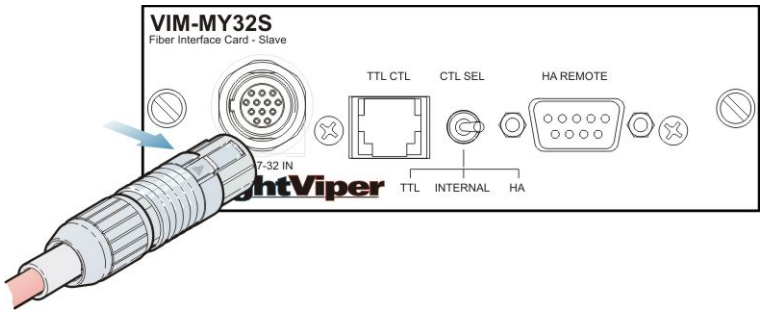
The Master / Slave Interconnect cable – each master / slave pair purchased comes with a high speed Neutrik 12 pin MiniCon connector. This cable connects the master card to the slave card.

The Fiber Jumper Cable – For those purchasing VIM-MY32MT4 cards with a system of 48 or 64 channels, a duplex PVC fiber cable is supplied to connect the fiber “pass-throughs” on the VIM-MY32MT4 to the VIM-MY32MST card. In 48 or 64 channel configurations, (2) master modules are required. This jumper connects one master card to the other.

Getting Started

To install your VIM-MY32 cards please follow these steps:

1. Power down your Yamaha console
2. Set clock master / slave switch on master card(s). This switch is found on the VIM-MY32M (master) circuit board. If the VIM-MY32 clock on the VIM-MY32M is being used as the main system clock, switch this to “Master”. If the Yamaha console internal clock is being used as the master clock, set this switch to “Slave”
3. Insert cards into appropriate YGDAI card slots, aligning the sides of the card with the with the support guides in the YGDAI slot
4. Connect master / slave cards with supplied Neutrik MiniCon cable. To ease connection make sure small silver triangle on the connector body is ‘up’ with respect to the card as shown.



5. Connect (if applicable) supplied fiber pass-through cable (VFC-0001-DST) between VIM-MY32MT4 and VIM-MY32MST cards.
6. Press the VIM-MY32 card firmly in place ensuring a complete connection between the multipin back plane of the VIM-MY32 card and the console
7. Secure the VIM-MY32 card with supplied thumb screws
8. Power up your Yamaha console
9. Check to see that “slave” LED is solid green
10. Ensure that the “sync” LED is solid green
11. Input audio signals and check for audio in both directions

Advanced functions of the Light Viper VIM-MY32 cards (control, clocks, etc.)

Using Yamaha control protocol with the LightViper VIM-MY32 cards

On the VIM-MY32S (slave) card, there are DB9 and RJ45 connectors. These connectors are used to input control from your Yamaha into the LightViper system to remotely control digital microphone preamplifiers (i.e. Yamaha AD8HR, Aphex 1788A, etc.). The RJ45 connector is for use with any LightViper accessory which uses TTL control. The DB9 connector may be used with a crossover DB9 to DB9 cable, utilizing the translation electronics on the VIM-MY32 card itself. The switch in between these connectors should be set to correspond with the connector being used (left or “TTL” for the RJ45, right or “HA” for the DB9 connector. In the case of the Yamaha LS9, this console has no external control connector. Control is fed internally to the back plane of the VIM-MY32 card itself. If you are using VIM-MY32 cards with a Yamaha LS9, the switch should be set to the middle “internal” position. Accessory LightViper products such as DGL-422 (Yamaha control protocol), MD3 (RS-422, MIDI, RS232 control) and DMX4 (DMX lighting control plus Yamaha control) can be connected to the TTL control connector.

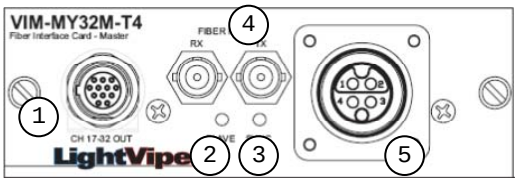
The Yamaha console will not display “VIM-MY32” on the console screen. The Yamaha console will recognize the VIM-MY32 card as a generic 16-channel expansion card. The name shown in the text field will be displayed as a generic name (i.e. “ADAT 16”). What is displayed may vary with the model and/or software version being run on the Yamaha console. Some Yamaha mixers may not be compatible with the LightViper VIM-MY32 cards. Software and firmware updates to the console may be required. Consult with Yamaha customer service or your console manual for additional information.

Setting up your Yamaha Console for operation with LightViper MY32 cards

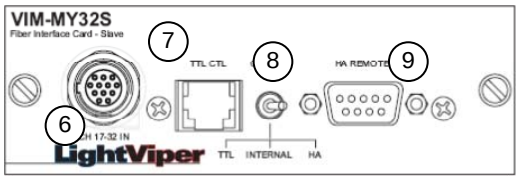
1. Go to the input patch screen and assign inputs to the appropriate slots
2. Go to the output patch section and patch your outputs to the appropriate slots

Important Note: While the Yamaha console shows (16) patchable outputs on the display screen, only (8) on each master card are actually assignable. You must assign outputs to the slot which contains the VIM-MY32 master card. There are (8) returns on a 32x8 system utilizing (1) VIM-MY32 master and (1) VIM-MY32 slave; (16) returns on a 48x16 system utilizing (2) VIM-MY32 masters and (1) VIM-MY32 slave; and (16) returns on a 64x16 system with (2) VIM-MY32 masters and (2) VIM-MY32 slaves. When using VIM-MY32S (slave) cards on a split, none of the control functions are operational from these split positions – only the primary VIM-MY32S cards located at FOH have the capability of utilizing these control functions. **When using VIM-MY cards on a split, the clock selection switch on the VIM-MY32 master card(s) must be set to "Master", as these cards will be feeding the master clock to the split console.** If using a system that contains both a LightViper VIM-1832 mixer box and VIM-MY32 cards, the VIM-1832 must operate at 24bit/48k using the external clock input.

> ***Note: When using the cards with a Yamaha LS9, the VIM-MY32M (Master) card must be used in slot #1 only. The control must also be assigned to slot #1 only.***



VIM-MY32MT4 (Master)



VIM-MY32S (Slave)

The VIM-MY32MT4, VIM-MY32MOC and VIM-MY32MST are identical with one exception. The T4 version contains a single TAC-4 fiber connector, The OC version contains a single Neutrik OpticalCon fiber connector, and the ST version contains a pair of ST fiber connectors. The VIM-MY32T4 (Master) and VIM-MY32S (Slave) card are shown here. Drawings of all versions can be found on page 14.

VIM-MY32M – Master Card

(1) **Neutrik MiniCon Connector** – This (12) pin connector is used to connect the VIM-MY32M master card to the VIM-MY32S slave card.

(2) **Slave LED** – This LED shows the status of your connection between your master and slave cards. If the LED is not lit, there is no connection. If the LED is flashing green this means the slave card is present but not in sync. If the LED is solid green, the connection between master and slave cards is active and in sync.

(3) **Sync LED** – This LED indicates the clock sync status of the system. If the LED is not lit, the card is not receiving power. If the LED is flashing green this means the system is searching for sync. If the LED is solid green the system is in sync.

(4) **ST Fiber Pass Through Connectors** – These fiber "pass-throughs" appear only on the VIM-MY32MT4 version of master card. These pass troughs allow you to access the additional (2) fibers in a TAC-4 connectos and connect them with the additional VIM-MY32MST master card in systems with 48 or 64 channels. On a 32channel system, these ST "pass-throughs" would not be used as there is only (1) master required for a 32x8 system. They could however be used to connect additional external fiber devices such as a LightViper EF-2 Physical Layer Ethernet converter.

(5) **Fiber Connector** – The main fiber connection illustrated above contains a TAC-4 connector. Other versions contain either a single Neutrik OpticalCon fiber-optic connector, or (2) ST fiber-optic connectors.

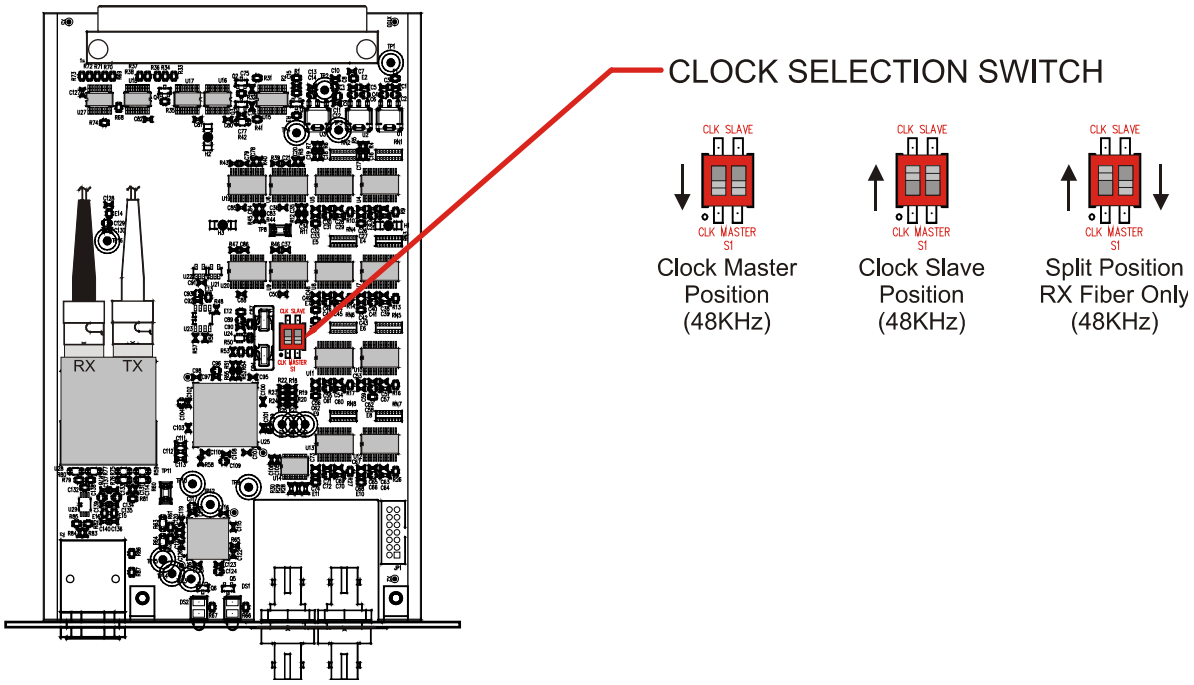
VIM-MY32S – Slave Card

(6) **Neutrik MiniCon Connector** – This (12) pin connector is used to connect the VIM-MY32M master card to the VIM-MY32S slave card.

(7) **TTL CTL Connector** – This connector is for use with the LightViper DGL-422 control cable, MD3 Multi Interface Converter or DMX4 DMX Lighting Converter, as well as any future TTL based LightViper accessory units.

(8) **CTL / SEL Switch** – This switch determines which connector on the VIM-MY32S (Slave) card is active. Switch to the left for RJ45 "TTL CTL", center for LS9 ("backplane") control, and right for DB9 "HA" control.

(9) **HA/Remote Connector** – This connector is for connecting a crossover DB9 to DB9 cable from the DB9 control output connector on the Yamaha console to the DB9 on the VIM-MY32S card.



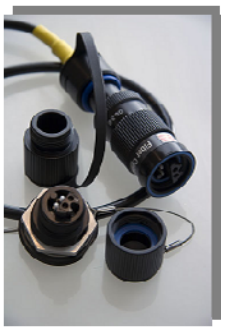
Clock Master / Slave Switch - This switch is found on the VIM-MY32M (master) circuit board. If the VIM-MY32 clock on the VIM-MY32M is being used as the main system clock, switch this to “Master”. If the Yamaha console internal clock is being used as the master clock, set this switch to “Slave”.

When using VIM-MY cards on a fiber split, the clock selection switch on the VIM-MY32 master card(s) must be set to “Split Position” (see above), as these cards will be feeding the master clock to the split console.

NOTE: When the VIM-MY32 is set to the “Clock Slave” position, the console must be set to use its “Internal 48K” as the clock source. If the VIM-MY32M is set to the “Clock Master” position or the “Split Position”, the console must be set to use AES Input Channel 1/2 as the clock source.

Fiber Options

Tactical grade military fiber - (TAC-4) is used for live production applications (P/N TFC-0000-04). Weighing 8.4 lbs.(12.6kg) for(300)feet, this cable contains (4) fibers and therefore it is capable of carrying the signals of (2) systems on a single cable. The TAC-4 connectors are hermaphroditic and can be connected to one another. Multimode fiber can transport signals up to 2km (1.25 miles).



TAC-4

Neutrik OpticalCon® Fiber – this fiber cable contains (2) fibers and is also a tactical grade fiber (P/N TFC-0000-02OC).

Neutrik OpticalCon Fiber Cable & Panel Mount Connector

PVC fiber – PVC duplex fiber contains (2) fibers. Plenum rated fiber is also available. The installer can terminate the fiber themselves, or Fiberplex can supply it pre-terminated. This fiber is also available with a strain relief and "pulling eye" which reduces on site labor.

ADDITIONAL OPTIONS

MD3 – A pair of LightViper MD3 units may be used to transport RS-422, MIDI or RS-232 from FOH to stage via the RJ45 connector on the VIM-MY32S card.

MD3 – FRONT & BACK

DMX4 – A pair of DMX4 enables the user to send (4) universes of DMX lighting control data, or (3) universes and Yamaha control. The Yamaha control is connected via the DB9 connector on the DMX4.

DMX4i & DMX4o

DGL-422 – This interconnect cable contains active electronics and allows the user to transport Yamaha control from the Yamaha console to the stage unit via the RJ45 connector on the VIM-MY32S card.

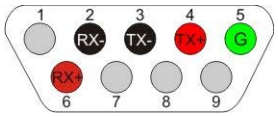
DGL-422

LightViper VIM-MY32 Card Specifications

1. General Specifications		
Total Harmonic	Less than 0.01%	1 KHz @ +4 dBu
Frequency Response	± 0.5 dB	20-20kHz @ +16 dBu
Dynamic Range	102 dB	
Crosstalk	5 dB above noise floor	
Sampling Rate	24 bit / 48 kHz	
Latency	10 µs one way digital	
Operating Temp	0 to +50°C ambient temperature.	
Slave LED	LED (green) indicates that VIM-MY32S Slave card is present and in sync. LED (flashing) indicates Slave card is present but not in sync. LED (off) indicates no Slave card present.	
Sync LED	LED (green) indicates optical link OK, LED (flashing) indicates problem with optical link, LED (off) indicates no power.	
AC Power	N/A	
Max Current Rating	VIM-MY32M VIM-MY32S	3.5 W from card slot 3.5 W from card slot
On / Off Control	RJ-45 connector for logic level control, CMOS or TTL at 2 MHz max per channel.	
Dimensions	VIM-MY32M VIM-MY32S	6.392" L X 4.740" W X 1.575" H (161mm X 100mm X 40mm) 6.392" L X 4.740" W X 1.575" H
Weight	VIM-MY32M VIM-MY32S	0.8 lbs (0.4 Kg) max 0.4 lbs (0.2 Kg)
*1-Hum & Noise are measured with an AES17 compliant filter at 20 kHz. Temperature condition @+10 - +25° C.		

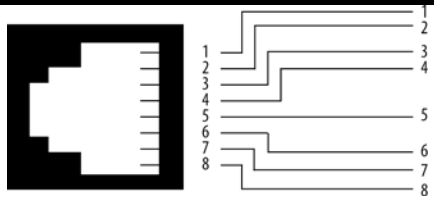
HA Connector Pin Outs

1.	Unused
2.	RX -
3.	TX -
4.	TX +
5.	Ground
6.	RX +
7.	Unused
8.	Unused
9.	Unused



Control Circuits RJ-45 Pin Outs

1.	GND
2.	TX1
3.	TX2
4.	TX3
5.	RX1
6.	RX2
7.	RX3
8.	VCC +5VDC



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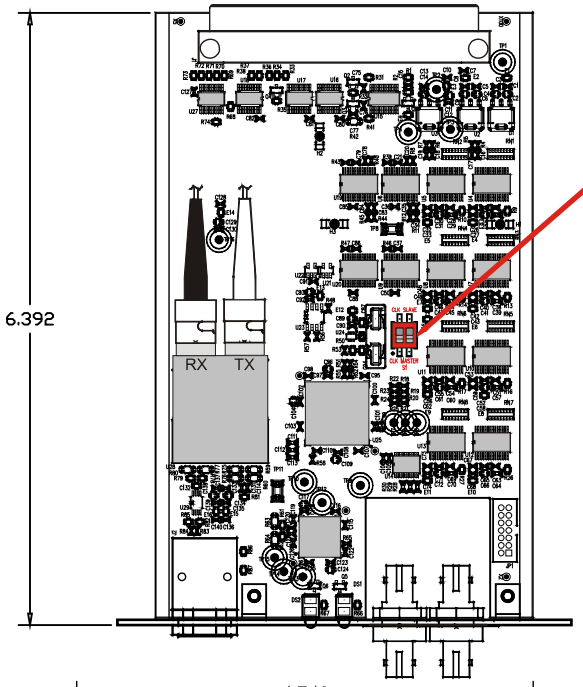


VIM-MY32M-ST (TYP)

CLOCK SELECTION SWITCH

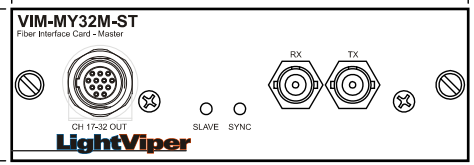
Clock Master Position (48KHz)

Clock Slave Position (48KHz)

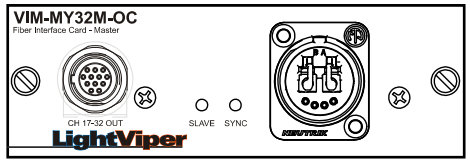
Split Position RX Fiber Only (48KHz)

1.575

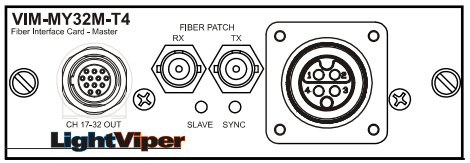
VIM-MY32M-ST



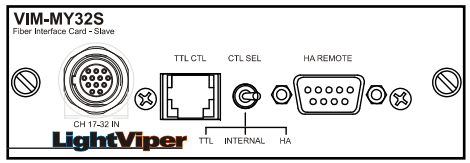
VIM-MY32M-OC



VIM-MY32M-T4



VIM-MY32S



UNLESS OTHERWISE SPECIFIED	ENGR. HSOIII	DATE: 06/06/2007	fiberplex LightViper
DIMENSIONS IN INCHES	DRAWN HSOIII	DATE: 06/06/2007	10840-412 Guilford Rd. Annapolis Junction, MD 20701 301-604-0100 fiberplex.com • lightviper.com
TOLERANCES: FRACTION +/- 1/64 .XX +/- 0.10 .XXX +/- 0.005 ANGLES	REVIEW	DATE:	VIM-MY32 Final Assembly
MATERIAL: #16 (0.059) CRS	CHECKED	DATE:	FSCM: C 117402 REV: A
FINISH: ZINC/GOLD CHROMATE			SCALE: 4:1 SHEET 1 OF 1

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